PATENT #6 7/3/01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
PATENT OPERATIONS

Art Unit: (Examiner)

Applicants: BADRI et al.

Serial No: 09/763,009

Filed: February 13, 2001

Title: METHOD AND DEVICE FOR TRANSMITTING INFORMATION SYMBOLS USING A PLURALITY OF CARRIERS AND METHOD AND DEVICE FOR RECEIVING INFORMATION SYMBOLS

Charlotte, North Carolina
April 3, 2001

Honorable Commissioner of Patents and Trademarks
Washington, D. C. 20231

Dear Sir:

CERTIFICATE OF MAILING

I hereby certify that this paper is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner of Patent and Trademarks, Washington, D.C. 20231, on: April 3, 2001

Lisa Camann
DOUGHERTY & CLEMENTS LLP
6230 Fairview Road, Suite 400
Charlotte, North Carolina 28210
Tel: 704/366-6642

April 3, 2001
Date

Docket 3104

PATENT

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SUPPLEMENT TO FORM SB/08A & 08B

INFORMATION DISCLOSURE CITATION EXPLAINING
THE RELEVANCE OF EACH OF THE NON-ENGLISH REFERENCES CITED IN THE
NATIONAL GERMAN AND INTERNATIONAL EXAMINATION PROCEEDINGS

1. Kammeyer, Karl Dirk, Nachrichtenubertragung, 15.1, "Probleme der Mobilfunkubertragung", pp 594 - 599.
2. DE 37 85 670 T2
3. DE 195 32 959 A1

INFORMATION DISCLOSURE STATEMENT
REMARKS

The attached PTO Form PTO/SB/08A/08B is incorporated as part of the Information Disclosure Statement. A copy of each cited document is enclosed herewith.

Applicants submit herewith patents, publications, or other information of which they are aware, which they believe may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR 1.56.

While this Information Disclosure Statement may be "material" pursuant to 37 CFR 1.56, it is not intended to constitute an admission that any patent, publication, or other information referred to therein is "prior art" for this invention unless specifically designed as such.

In accordance with 37 CFR 1.97(b), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 CFR 1.56(a) exists.

1) Pages 594 to 599 of the German textbook by Kammeyer relate to problems in connection with mobile communication. Channels for mobile communications are time selective and frequency selective. A multi-carrier transmission is proposed in which an OPSK modulation is suggested for each partial band.

This reference does not relate to the constellation mapping or constellation diversity as described in the present application.

2) DE 37 85 670 T2 relates to a method for digital transmission especially suited for moving vehicles. For reducing disturbance, an interleaver connected to a convolutional encoder is suggested. This reference also does not relate to the constellation diversity as described in the present patent application.

3) DE 195 32 959 A1 relates to a method of transmitting digital data via noisy broadcast channels and to an apparatus for receiving digital data transmitted via noisy broadcast channels. Digitally coded data are modulated by means of an OFDM modulation and are transmitted in a transmission frame. The same data are transmitted at a later time in the same frame. In the receiver, data from

the two transmissions are stored and processed. In particular, the data from both transmissions are added when they are identical.

To summarize, this reference discloses a time diversity method in which the same information is transmitted at two time instances. Therefore, this reference is not pertinent to the present invention.

Respectfully submitted,

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RHD/ljc

Attorney's Docket 3104

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	09/763,009
Filing Date	02-13-01
First Named Inventor	BADRI et al.
Group Art Unit	
Examiner Name	
Attorney Docket Number	3104

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	U.S. Patent Document Number	Kind Code[2] (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Office[3]	Number[4]	Kind Code[5] (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
		DE	195 32 959	A	Bosch GmbH	02-13-97		
		DE	3785670		France Telecom	08-19-93		

Examiner Signature		Date Considered	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 2 of 2

Complete if Known	
Application Number	09/763,009
Filing Date	02-13-01
First Named Inventor	BADRI et al.
Group Art Unit	
Examiner Name	
Attorney Docket Number	3104

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
		KAMMEYER, Karl Kirk, Nachrichtenubertragung, 15.1, "~~Probleme der Mobilfunkubertragung~~", ~~pp 594-599, Stuttgart: Teubner, 1992.~~	
		UNGERBOECK, gottfried, "Channel Coding with Multilevel/Phase Signals", pp 55-66. IEEE Transaction on Information Theory, vol. IT-28, No. 1 January 1982.	
		WEINSTEIN, S.B., et al., "DATA TRANSMITTION BY FREQUENCY-DIVISION MULTIPLEXING USING THE DISCRETE FOURIER TRANSFORM", pp 628-634, IEEE Transactions on Communication Technology, vol. 1, COM-19, No. 5, Oct. 1971.	
		ZOU, William Y., et al., "COFDM: AN OVERVIEW", pp 1-8, IEEE Transactions on Broadcasting, vol. 41, No. 1, March 1995.	
		European Telecommunication Standard ETS 300 744, March 1997	
		May, Thomas, et al., "PERFORMANCE ANALYSIS OF VITERBI DECODING FOR 64-DAPSK and 64-QAM MODULATED OFDM SIGNALS" pp 182-190, IEEE Transactions of Communication, vol. 46, No. 2, February 1998.	
		FISCHER, Robert, "CALCULATION OF SOFT-OUTPUT IN DIFFERENTIAL PHASE MODULATION", pp 9 - 16, Lehrstuhl fur Nachrichtentechnik II, Universitat Erlangen-Nurnberg.	

Examiner Signature		Date Considered	

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